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CLAIMS

- Sub A2
1. A method for replication of a target region of a target DNA molecule comprising the steps of:
- (a) introducing a D-loop into the target DNA molecule at a first initiation point adjacent to the target region in a reaction mixture;
  - (b) adding proteins to the reaction mixture to assemble a replisome at the D-loop; and
  - (c) providing DNA monomers and ATP to the replisome, whereby the target region is reproduced.
2. The method of claim 1, wherein the target DNA molecule is a duplex DNA.
3. The method of claim 2, wherein the step of introducing a D-loop is performed by hybridizing the duplex DNA molecule with a first oligonucleotide primer which is substantially complementary to the first initiation site.
4. The method of claim 3, wherein the first oligonucleotide primer has a length of from 20 to 50 bases.
5. The method of claim 3, wherein the first oligonucleotide primer comprises a detectable label or capture moiety.
6. The method of claim 3, further comprising the step of introducing a second D-loop by hybridizing the duplex DNA molecule with a second oligonucleotide primer which is substantially complementary to a second initiation site, said target region lying between the first and second initiation sites.
7. The method of claim 6, wherein the first and second oligonucleotide primers each have a length of from 20 to 50 bases.
- Sub A3
- Sub A4

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1 8. The method of claim 6, wherein at least one of the oligonucleotide  
2 primers comprises a detectable label or capture moiety.

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1 9. The method of claim 6, wherein the replication is performed in a  
2 supporting matrix.

1 10. The method of claim 6, wherein the replisome is assembled via the  
2 action of primosomal proteins, single-stranded DNA-binding protein and the DNA  
3 polymerase III holoenzyme.

1 11. The method of claim 10, wherein the primosomal proteins includes a  
2 mutant PriA protein which lacks ATPase and helicase functionality.

1 12. The method of claim 2, wherein the replication is performed in a  
2 supporting matrix.

1 13. The method of claim 1, wherein the replication is performed in a  
2 supporting matrix.

1 14. The method of claim 1, wherein the replisome is assembled via the  
2 action of primosomal proteins, single-strand binding protein and holoenzyme III.

1 15. The method of claim 14, wherein the primosomal proteins includes a  
2 mutant PriA protein which lacks ATPase and helicase functionality.

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